

LISTING OF THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in this application.

Claim 1 (Cancelled)

Claim 2 (Currently Amended) The method of Claim [[1]] 13 wherein said first semiconductor layer is subjected to a step in which a surface native oxide layer is removed prior to forming said monolayer.

Claim 3 (Original) The method of Claim 2 wherein said surface native oxide layer is removed by a hydrofluoric acid-containing solution.

Claim 4 (Currently Amended) The method of Claim [[1]] 13 wherein said first semiconductor layer is subjected to a hydrogen termination processing step prior to forming said monolayer.

Claim 5 (Original) The method of Claim 4 wherein said hydrogen termination processing step comprises contacting the first semiconductor layer with hydrofluoric acid either in solution or in the gas phase.

Claim 6 (Original) The method of Claim 4 wherein said hydrogen termination processing step comprises a hydrogen anneal.

Claim 7 (Currently Amended) The method of Claim [[1]] 13 wherein said dopants are n-type dopants or p-type dopants.

Claim 8 (Cancelled)

Claim 9 (Currently Amended) The method of Claim [[1]] 13 wherein said ~~dopants are~~ located in the second semiconductor layer is doped.

Claim 10 (Currently Amended) The method of Claim [[1]] 13 wherein said forming said monolayer comprises contacting the first semiconductor layer with a solution comprising iodine and an alcohol.

Claim 11 (Original) The method of Claim 10 wherein said solution comprising iodine and an alcohol contains from about 1×10^{-3} to about 1×10^{-5} M of iodine in alcohol.

Claim 12 (Currently Amended) The method of Claim [[1]] 13 wherein said forming a second semiconductor layer comprises a deposition process that is performed at a temperature of about 500°C or greater.

Claim 13 (Currently Amended) A method of controlling dopant diffusion comprising: forming a monolayer comprising carbon and oxygen on a first semiconductor layer that includes dopants therein, said monolayer substantially retards diffusion of dopants;

~~The method of Claim 1 further comprising annealing said first semiconductor layer[[,]]~~
and said monolayer to activate said dopants, ~~said anneal occurs prior to forming said second~~
~~semiconductor layer, and~~
forming a second semiconductor layer on said monolayer.

Claim 14 (Original) The method of Claim 10 wherein said alcohol comprises methanol.

Claim 15 (Cancelled)

Claim 16 (Currently Amended) The method of Claim [[15]] 26 wherein said first material layer is a first semiconductor layer which is subjected to a step in which a surface native oxide layer is removed prior to forming said monolayer.

Claim 17 (Currently Amended) The method of Claim [[15]] 26 wherein said first material layer is subjected to a hydrogen termination processing step prior to forming said monolayer.

Claim 18 (Original) The method of Claim 17 wherein said hydrogen termination processing step comprises contacting the first material layer with a hydrofluoric acid-containing solution, a gas phase containing hydrofluoric acid or a hydrogen anneal.

Claim 19 (Currently Amended) The method of Claim [[15]] 26 wherein said dopants are n-type dopants or p-type dopants.

Claim 20 (Currently Amended) The method of Claim [[15]] 26 wherein said dopants are located in said first material layer.

Claim 21 (Currently Amended) The method of Claim [[15]] 26 wherein said dopants are located in said overlayer.

Claim 22 (Currently Amended) The method of Claim [[15]] 26 wherein said forming said monolayer comprises contacting the first material layer with a solution comprising iodine and an alcohol.

Claim 23 (Original) The method of Claim 22 wherein said solution comprising iodine and an alcohol contains from about 1×10^{-3} to about 1×10^{-5} M of iodine in alcohol.

Claim 24 (Currently Amended) The method of Claim [[15]] 26 wherein said overlayer comprises a semiconductor material, an insulator, a conductor or any combination thereof.

Claim 25 (Currently Amended) The method of Claim [[15]] 26 wherein said forming the overlayer comprises a deposition process that is performed at a temperature of about 500°C or greater.

Claim 26 (Currently Amended) A method of controlling dopant diffusion comprising: forming a monolayer comprising carbon and oxygen on a first material layer; and

forming an overlayer on said monolayer, wherein one of said first material layer or said overlayer contains dopants and said monolayer substantially retards diffusion of said dopants;
and

~~The method of Claim 15 further comprising~~ annealing said first material layer, said monolayer and said overlayer.

Claim 27 (Original) The method of Claim 21 wherein said alcohol comprises methanol.

Claim 28 (Currently Amended) The method of Claim ~~[[15]]~~ 26 wherein said first material layer comprises an insulator and the overlayer comprises a conductor.